

ABSTRACT OF THE DISCLOSURE

With a view to preventing increases in forward voltage due to a change with the lapse of time of a bipolar semiconductor device using a silicon carbide semiconductor, a buffer layer, a drift layer and other p-type and n-type semiconductor layers are formed on a growth surface, which is given by a surface of a crystal of a silicon carbide semiconductor having an off-angle  $\theta$  of 8 degrees from a (000-1) carbon surface of the crystal, at a film growth rate having a film-thickness increasing rate per hour  $h$  of 10  $\mu\text{m}/\text{h}$ , which is three times or more higher than conventional counterparts. The flow rate of silane and propane material gases and dopant gases is largely increased to enhance the film growth rate.